

teachings are so broad, that without undue experimentation, many of the literally hundreds and even thousands of combinations which fall into the broad teachings of Tsao '296 are not actually being enabled.

"The reference must be enabling and describe the applicant's claimed invention sufficiently to have placed it in possession of a person of ordinary skill in the field of the invention." *In re Paulsen*, 30 F.3d 1475, 1478. Tsao '296 does not place the claimed invention in possession of a person of ordinary skill in the art. It lists 19 zeolites, six Group VIII metals and all possible non-noble metals. Nor does Tsao '296 make applicant's claims obvious under § 103(a), since when Tsao '296 does go into specifics capable of enabling the invention, it teaches platinum, rhodium or iridium instead of ruthenium. Further, Tsao '296 only suggests that non-noble metals in general may be used. When it does it go into more detail, it teaches Zn, Ga, Co, Mo, Ni, W and Re instead of Sn (tin). It would therefore not be obvious in view of the disclosure in Tsao '296 to make a catalyst using MCM-22 with ruthenium and tin.

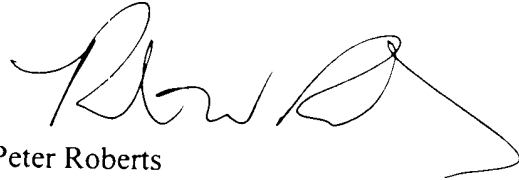
Applicant wishes to stress that this is line with the Examiner's own citations of case law. "(A)nticipation can only be found if the classes of substituents are sufficiently limited or well delineated." *Ex parte A*, 17 USPQ 2d 1716. The substituents of Tsao '296 are neither limited or well delineated. Further, "one of ordinary skill in the art must be able to draw the structural formula or write the name of each of the compounds included in the generic formula before any of the compounds can be 'at once envisaged'" *In re Schauman*, 197 USPQ 5, would require that, in this case, one of ordinary skill in the art could at once draw the structural formula for many hundreds of complex catalyst. This is beyond the aptitude of one of ordinary skill in the art.

The Examiner has further rejected claims 7-11 under § 102(b), and in the alternative under § 103(a), because of Del Rossi (US 5,108,969). Similarly to Tsao '296 above, Del Rossi '969 broadly teaches using MCM-22 with all Group VIII metals and one of tin, indium, thallium, lead and sulfur. As Tsao '296 above, when Del Rossi '969 does specifically mention which Group VIII metals can be used, column 8 lines 15-16, ruthenium is not mentioned. The level of experimentation required makes this reference non-enabling for the claimed invention, and further, it teaches away from using ruthenium, therefore not making the claimed invention obvious either.

These assertions are further supported by the improved results obtained with ruthenium and tin in the conversion of benzene to cyclohexylbenzene as shown in example 9.

In light of the above argument, applicant believes that all pending claims are in a state of allowance and requests that the Examiner issue a notice of allowance.

Respectfully submitted,



Peter Roberts
Reg. No. 31,702
Attorney for the Applicants
703-934-7006

Peter W. Roberts
Roberts, Mlotkowski & Hobbes, PC
3911 Old Lee Highway, Suite 43 B
Fairfax, VA 22030